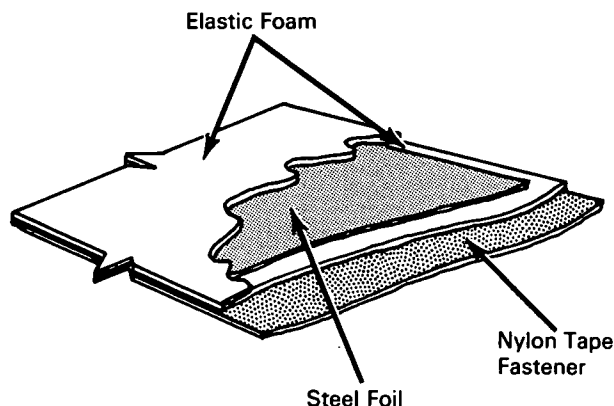
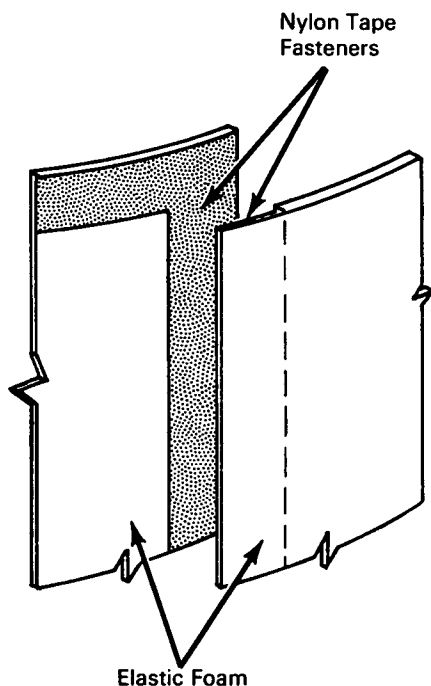


NASA TECH BRIEF



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Impact- and Puncture-Resistant Material Protects Parts from Damage



The problem:

To devise a lightweight impact- and puncture-resistant covering material that will protect delicate parts and equipment from damage during transportation and storage.

The solution:

Uniform-sized, laminated panels consisting of sheets of steel foil bonded between sheets of elastic foam.

How it's done:

The panels are made in convenient sizes and provided with adhesive-coated nylon tape at the edges to enable joining individual panels into a protective blanket or enclosure or practically any size and shape. Impact absorption and puncture resistance results from the laminated elastic foam and steel foil construction of each panel. Lateral components of forces contacting a panel surface are transmitted through

(continued overleaf)

the elastic skin to adjacent areas of the panel where they are dissipated. Orthogonal components of forces on the outer skin are transmitted to the steel foil core, whose bearing strength is supported by the elastic skin on the opposite face of the panel. This skin transmits the orthogonal force components elastically as distributed loads on the enclosed part.

Notes:

1. The panels formed into an enclosure also provide a barrier against moisture and thermal shock.
2. Individual panels are readily removed from an enclosure to expose selected portions of equipment for inspection.

3. The panels may be stored flat or in rolls.
4. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas 77058
Reference: B66-10375

Patent status:

No patent action is contemplated by NASA.

Source: Don D. Sheriff
of North American Aviation, Inc.
under contract to
Manned Spacecraft Center
(MSC-747)